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Ministry of Higher Education and Scientific Research
Mustapha Stambouli University of Mascara
Faculty of Exact Science
Computer Science Department



END OF STUDY MEMORY

For obtaining license degree in Computer Science

Theme

**Web Site of Library Management System of Exact
Sciences Faculty**

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Acknowledgments

This represents the completion of a long and tedious work that would not have been possible without the participation, help, advice, or even the presence of many people. We apologize in advance for the forgotten names.

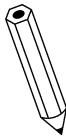
We would like to express our sincere gratitude to **Mrs. Mahi Faiza**, who agreed to be our supervisor. She provided us with guidance and support throughout the project and contributed significantly to its success. Above all, we thank her for the trust she placed in our abilities and potential.

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We would also like to express our appreciation to our colleagues and friends who provided us with support and encouragement.

Dedication1



.... I dedicate this work:

TO

The person whom I deeply miss and wish were with me right now to directly express my love and gratitude to him is ... my dear father.I pray that Allah has mercy on him and grants him a place in the spacious gardens of Paradise.

TO

My mother who always encouraged and supported me to pursue my dreams, her constant love was the source of my strength and inspiration.

TO

My dear family members... I know it's difficult to mention each individual by name, but I want all of you to know that my love for you knows no bounds.

TO

Finally, I would like to thank my partner Leila who made the journey more exciting. Her constant encouragement was crucial in shaping this research, and I am grateful for the many hours we spent discussing our ideas and work.

Bouaka khadidja

Dedication 2



.... I dedicate this work:

TO

**The one who taught me that what Allah has written for us,
we will receive itTo my dear mother whom i miss her**

Mekcem Oumria may ALLAH have mercy on her.

TO

My beloved father and my support in this life Noureddine.

TO

My elder sister and my second mother ... Fatima Zohra.

TO

My sisters, brothers, and their children.

TO

My teacher Mahi Faiza and my partner Khadidja.

TO

Everyone who cares about me and my success.

★ ★ ★

Leila Kasmi

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General Introduction

The university library serves as a vital center in the academic environment, providing the necessary resources for learning and scientific research for faculty members and students. Over time, university libraries have witnessed significant development to meet the changing needs of beneficiaries and keep up with modern technology.

In the past, university libraries primarily relied on printed sources such as books, journals, and articles, the library spaces were limited to reading and studying only. Research and accessing information required significant time and effort, as researchers had to search for sources within traditional indexes and cataloging systems.

With the advancement of technology, university libraries have undergone a significant digital transformation. Electronic sources and digital resources have become an essential part of library collections, offering instant and flexible access to a wealth of academic and scientific content. These resources include digital databases, e-books, online scientific journals, and materials related to academic research.

Therefore, it has become necessary to adopt an efficient and systematic approach in library operations.

Our main objective is to transition from primarily relying on printed resources to providing electronic sources and information technology. We aim to offer an effective and user-friendly lending system that enables users to efficiently request and borrow materials within a short timeframe. Additionally, we strive to efficiently manage library resources, including books, graduation theses, and other materials. Our goal is to provide comprehensive and advanced services to members of the academic community, thereby enhancing the processes of learning, research, and innovation in higher education.

This frameWork is structured as follows :

The goal of **the first chapter** is to introduce the topic, together with its history, organizational structure, identified problem, and suggested course of action.

In **the second chapter**, we discuss the unified modeling language (UML) and conduct a thorough analysis to provide visual models that illustrate how the library works.

In the third chapter more of a technical study where we describe the software that have been used in development process and features of our application throw screenshots, Also describing database tables and finally We conclude with a general conclusion.

Chapter **1**

Presentation and Problem

1.1 Introduction

Libraries play a vital role in academic environments, serving as knowledge hubs and supporting educational and research objectives. However, they face various challenges that require attention and strategic solutions. In this chapter, we will explore the role of libraries, their significance, and the challenges they encounter in today's academic landscape.

In this chapter, we provided an overview of the library, its role in the academic environment, and its importance. We focused on the challenges it faces in the age of technology and digitization.

1.2 Presentation of Mustapha Stambouli University

1.2.1 University History

Mustapha STAMBOULI University is distinguished by its cultural influence, its scientific capital and its contribution to the development of the Wilaya of **Mascara**. It was founded in **1986**, in the form of **National Institute of Higher Education** (INES), specializing in the field of **Agronomy** which has now developed into a University composed of seven (**07**) **faculties**, spread over three university poles. This development has enabled the continuation of the desired growth program, both in terms of the necessary land spaces and in the diversification of the courses and specialties offered to students, with a view to a permanent qualitative improvement of the level of excellence.

[1]

1.2.2 Structures Administratives et Pédagogiques :

The organization of Mustapha STAMBOULI University in Mascara consists of a rectorate that includes the general secretariat, vice-rectorates, common services, the central library, and several faculties. [1]

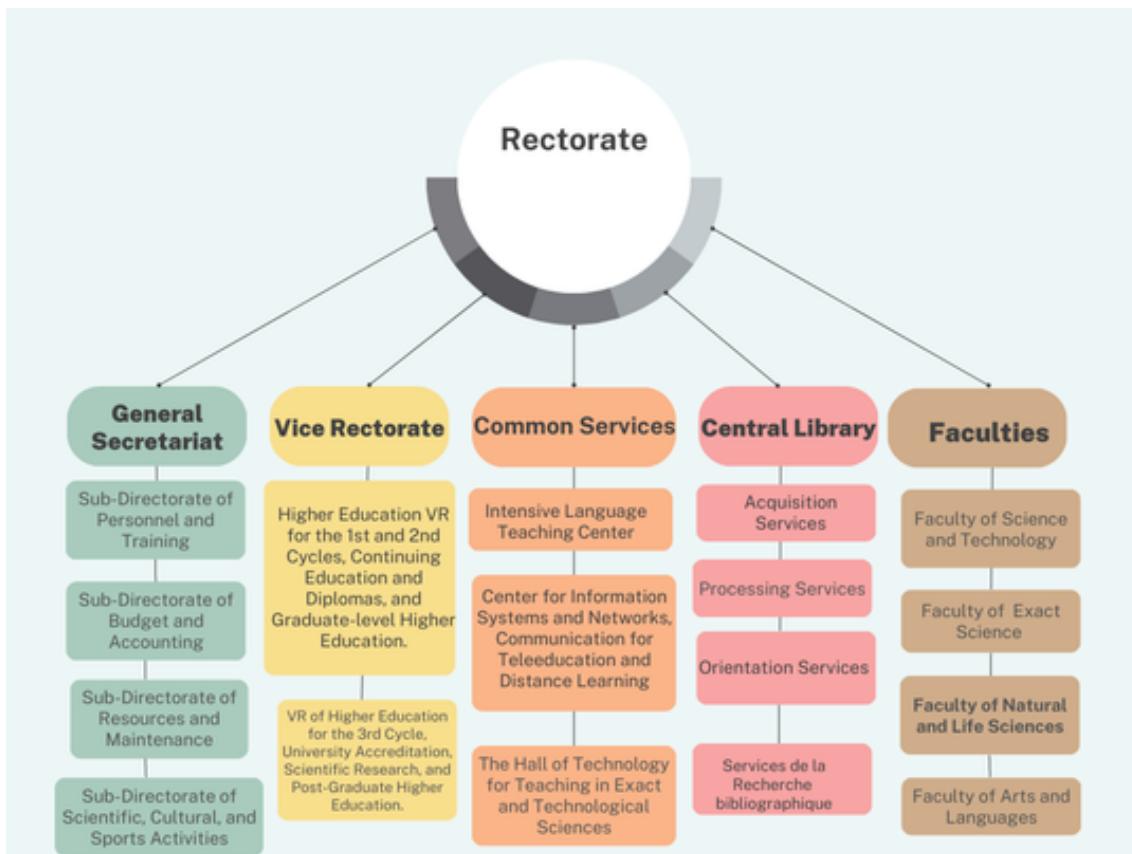


Figure 1.1: Administrative and educational structures

1.3 Faculty of Exact Sciences

May 2015 saw the birth of the **Faculty of Exact Sciences** (FSE) by Executive Decree No. 15-110 of 03/05/2015 which entrusts it with the tasks of scientific research related to Higher Education.

The **Faculty of Exact Sciences** plays an important role within the University of **Mascara** through quality training and high-level research in many fields including Mathematics - Computer Science and Material Sciences.

The Faculty of Exact Sciences of Mustapha Stambouli University includes **04 departments**, bringing together approximately **1225** students in **graduation** and **95** in **post-graduation**, servants and **101 teacher-researchers**.

Several training offers for bachelor's and master's degrees in the fields of **Material Science** (SM) and **Mathematics-Computer Science** (MI) are open within our faculty; **05 license courses** and **09 Master courses**.

At the Post-Graduation Level, our Faculty offers organized doctoral training with **06 LMD** doctoral training courses, **03 in chemistry, 01 in physics, 01 in mathematics** and **01 in computer science**, comprising more than **40 positions**.

In terms of University Research, the Faculty of Sciences hosts **02 research laboratories** recognized by the Ministry of Higher Education and Scientific Research which deal with innovative themes through several research projects (**CNEPRU projects, PNR projects, etc.**) , thus contributing to the national and international influence of our Faculty.

If the functioning of pedagogy within the Teaching Departments works very well, it is because there is an involvement of the main actors of the faculty who are the students, the teachers and the administrative and technical staff. That is why I would like to thank them for their contributions.[1]

1.4 Presentation of Library

1.4.1 Definition of a University Library

A university library is a dedicated facility that houses a wide range of information resources, such as books, journals, databases, and digital materials, to support the teaching, learning, and research needs of the university community. It serves as a central hub for accessing knowledge and information in various formats.

University libraries often have vast collections covering various academic disciplines and subject areas. They provide resources and services to students, faculty, researchers, and staff members. These resources can include textbooks, reference materials, scholarly articles, research papers, multimedia materials, and more.

In addition to the extensive collection of resources, university libraries offer a range of services and facilities. These can include borrowing and returning materials, access to electronic resources and databases, as well as quiet and comfortable study spaces for studying and research.

The university library is a vital academic resource that fosters intellectual growth, promotes research excellence, and supports the overall educational mission of the university. It serves as a key information hub, providing access to reliable and up-to-date resources, expert guidance, and a conducive learning environment for students and researchers.[6]

1.4.2 Organigram Library :

[1]

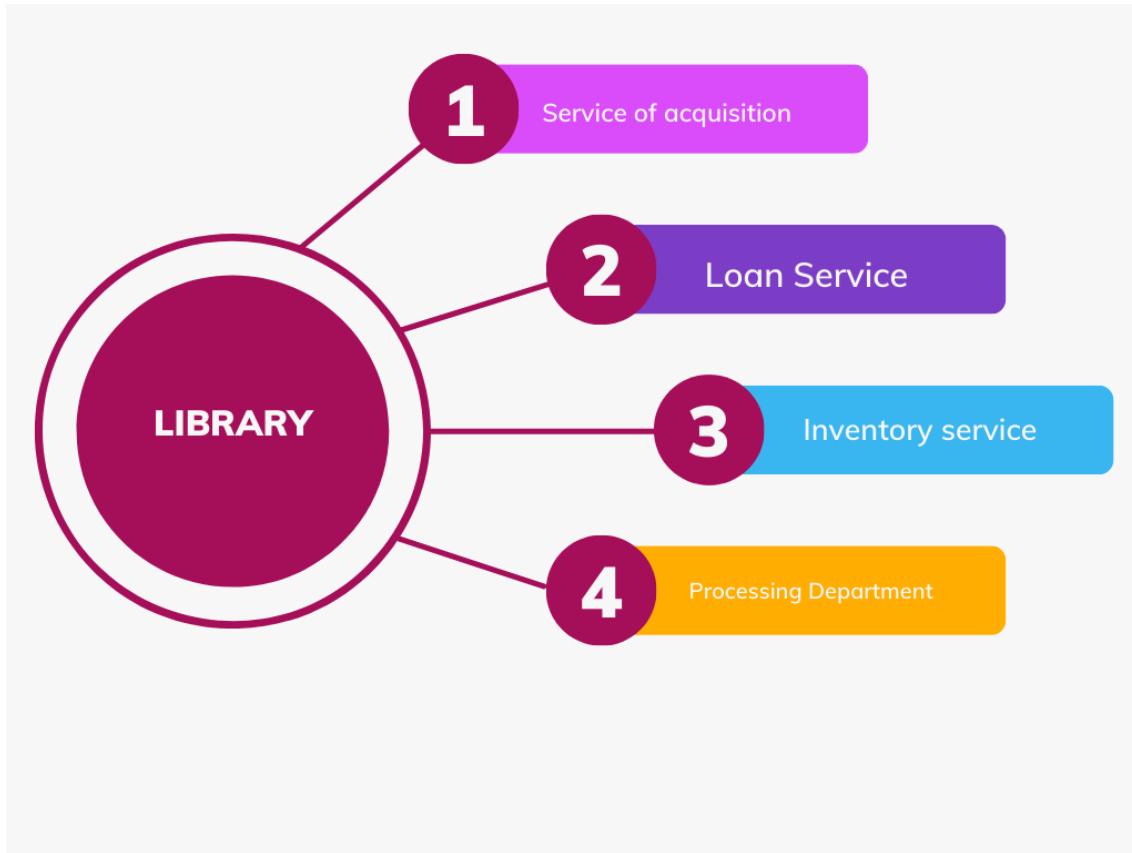


Figure 1.2: Organigram Library

1.4.3 Library services :

[1] Among the services provided by university libraries :

- **Acquisitions Department :**

The Acquisitions Department is a department within a company or organization that is responsible for purchasing goods or services needed by the organization. The primary function of the Acquisitions Department is to acquire the necessary resources to support the operations and objectives of the company, while ensuring that purchases are made at the most competitive prices and under the best possible terms and conditions. This department typically works closely with other departments within the organization, such as the finance department, to ensure that the procurement process is carried out in a timely and efficient manner.

- **Inventory service :**

The inventory service involves the process of taking stock and registering the materials available in the library, in order to maintain an accurate record of available and borrowed materials, and to update this record regularly. This service includes inspecting books, documents, and other sources, identifying their condition, classifying them, and recording them in the library's inventory system. The inventory service in the library helps to improve the management of available resources, facilitate borrowing and lending operations, and better meet the needs of users.

- **bibliographic processing service :**

Bibliographic processing service refers to the process of organizing, describing, and cataloging library materials in a consistent and standardized manner, using bibliographic data such as title, author, subject, and publisher. This service involves creating and maintaining accurate records of library materials in a database or catalog, assigning call numbers, and adding relevant metadata. Bibliographic processing services help libraries to provide access to their collections and make it easier for users to locate the materials they need through various search options. This service is essential for libraries to effectively manage their collections and ensure that they are accessible to users.

1.4.4 Administration of Exact Sciences Library :

The management of the library is under the responsibility of a curator (**Ms. BOUAZZA Naima**), with the help of a team of documentation professionals who accompany users in all their procedures.

The **Library** is open from Sunday to Thursday as follows:

- From **08:30** a.m. to **12:00** p.m.
- From **1:30** p.m. to **4:30** p.m.

1.4.5 Registration at the Library

Registration in a university library is a process that allows students, faculty members, and staff to access the library's resources and services. In order to use the library, one must first register and obtain a library card or account. This card or account serves as proof of one's affiliation with the university and grants access to materials such as books, journals, databases, and other resources.

The registration process typically involves filling out an application form and presenting identification to verify one's identity and affiliation with the university. Depending on the institution, there may be additional requirements, such as providing proof of address or paying a fee for library services.

Once registered, library users can borrow materials, request interlibrary loans, access electronic resources, and use the library's study spaces and equipment. The library may also offer research assistance and workshops to help users navigate its resources and services.

File of registration : To register in the library and obtain a library card, please bring the complete file, which contains :

- Photocopy of the registration certificate for the current year .
- (02) pictures .
- (02) Stamped and addressed envelopes .
- Fulfill a commitment .

1.5 The role of the library in the academic environment and its importance

The library plays a vital role in the academic environment and holds great importance for several reasons:

- Providing educational and research resources: The library offers a comprehensive range of educational and research resources such as books, journals, periodicals, articles, and databases. These resources enhance the process of learning and research, contributing to the development of knowledge and scientific exploration.
- Empowering students and researchers: The library provides opportunities for students and researchers to access reliable and diverse knowledge sources. It plays a crucial role in enhancing their research, reading, and analytical skills, as well as guiding them in effectively utilizing resources.
- Promoting self-directed learning: The library enables students and faculty members to benefit from self-directed learning and professional development opportunities. It can provide diverse educational resources to support continuous learning and the development of academic and professional skills.
- Enhancing scientific research: The library provides essential resources for faculty members and researchers to conduct high-quality and innovative research. The availability of scientific journals, articles, and databases helps researchers stay updated with the latest developments in their fields and promotes scientific interaction.

[7]

1.6 Addressing and Confronting the Challenges Faced by Libraries

In the digital age, libraries face several challenges that require adaptation and proactive approaches. Some of these challenges include:

- Digital Transformation: Libraries need to keep up with technological advancements and undergo digital transformation. This involves digitizing collections, implementing online catalog systems, providing access to electronic resources, and embracing emerging technologies such as artificial intelligence and data analytics.
- Changing User Needs: Users' expectations and preferences have evolved with the digital age. Libraries must adapt their services to meet these changing needs. This may include providing remote access to resources, offering personalized recommendations, supporting collaborative learning and research, and fostering digital literacy skills.
- Preservation of Digital Assets: The preservation of digital materials poses unique challenges due to rapidly changing technologies and formats. Libraries need to develop robust digital preservation strategies to ensure the long-term accessibility and integrity of digital collections.
- Information overload and misinformation.

[12]

1.7 Conclusion

It can be said that the university library management system is one of the vital and necessary systems to ensure obtaining distinguished and effective services in university libraries. The LMS helps in organizing library management operations and improving lending and research services, in addition to providing digital resources to beneficiaries through the library's website. The system also enables tracking of available books and resources, managing statistics and lending reports, and other administrative tasks.

In the next chapter, titled "System Analysis and Design," we will delve deeper into the study and design of our proposed library management system.

Chapter **2**

System Analysis and Design

2.1 Introduction :

In this chapter, we present the modeling of our system using the **UML** language, relying on the **UP** process (Unified Process), consequently, we will detail the three stages: First of all, we will start by defining the use case diagram, then the use cases will be detailed in several sequence diagrams, we will end with the presentation of the class diagram which describes the structure of the system studied.

2.2 Representation of the Application:

Visitor :

- Contact the administration.

Member (Student or Professor) :

- Modify personal information.
- Consult History.
- Return Ressource.

Administrator :

- Modify personal information.
- Consult the catalog.
- Manage database:
 - Manage Type.
 - Manage Member.
 - Manage Author.
 - Manage Publisher.
 - Manage Language.

2.3 Definition of UML :

UML(**Unified Modeling Language**(implied: oriented object)) is a universal notation-based language graphics widely accepted by the **Oriented Objec** community. He is independent of the languages of programming, fields of application and development process. Proposal of a process unified.

It improves and facilitates:

- Communication
- representation
- understanding of object solutions

2.4 Definition of used diagrams :

2.4.1 Use case diagrams

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. In this context, the term "system" refers to something being developed or operated, such as a mail-order product sales and service Web site. Use case diagrams are employed in UML (Unified Modeling Language), a standard notation for the modeling of real-world objects and systems. There are a number of benefits with having a use case diagram over similar diagrams such as flowcharts. [3]

Use case diagram uses

The reasons why an organization would want to use case diagrams include:

- Represent the goals of systems and users.
- Specify the context a system should be viewed in.
- Specify system requirements.
- Provide a model for the flow of events when it comes to user interactions.

- Provide an outside view of a system.
- Shows external and internal influences on a system.

Actors Definition:

An Actor in use case modeling specifies a role played by a user or other system that interacts with the subject. An Actor models a type of role played by an entity that interacts with the subject, but which is external to the subject.

Actors of this application:

- Visitor
- Users
- Admin person who's manage all data base.



Figure 2.1: Actor formalism

Use case:

A use case is a description of all the ways an end-user wants to “use” a system. These “uses” are like requests of the system, and use cases describe what that system does in response to such requests. In other words, use cases describe the conversation between a system and its user(s), known as actors.

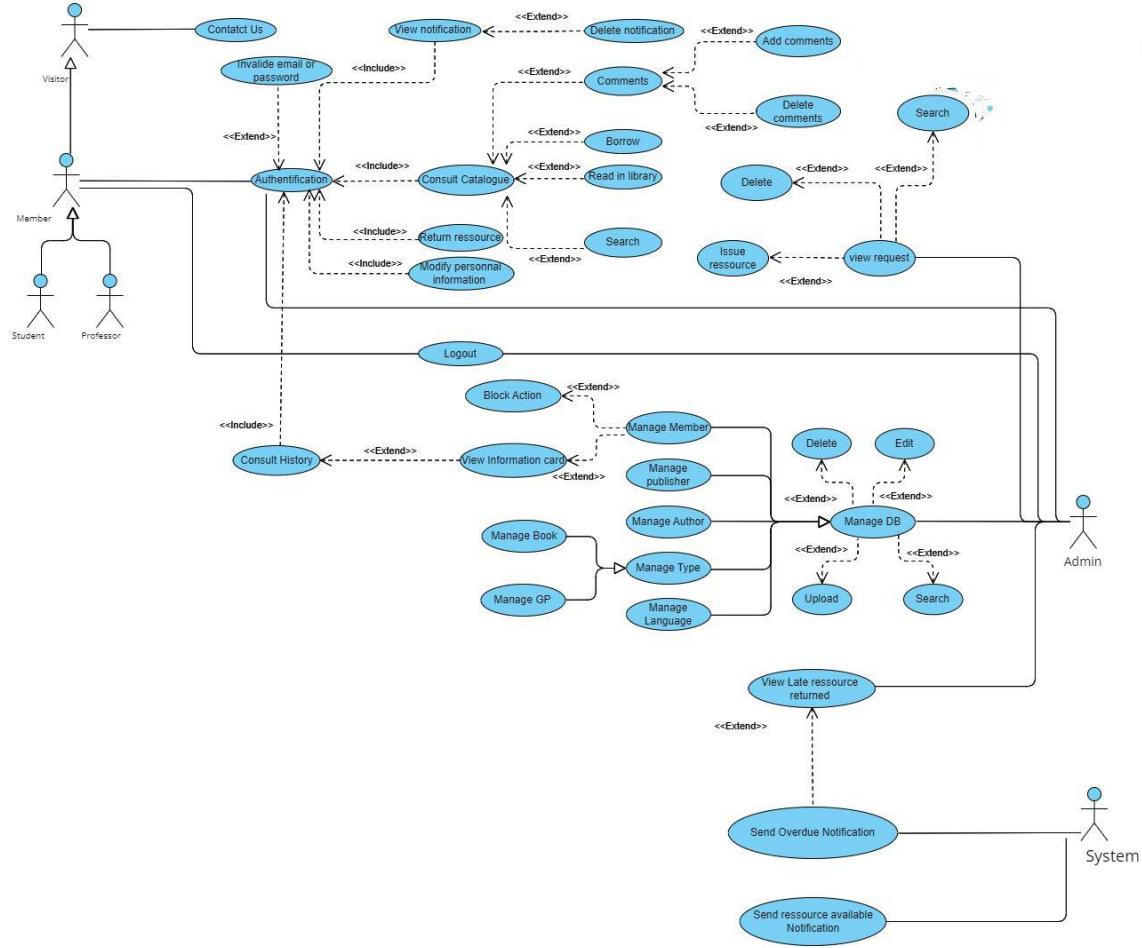


Figure 2.2: Use Case Diagram

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Figure 2.3: Qr Code of use case

2.5 Sequence Diagram:

2.5.1 Definition:

Sequence diagram is the most common kind of **interaction diagram**, which focuses on the **message** interchange between a number of **lifelines**.

Sequence diagram describes an interaction by focusing on the sequence of messages that are exchanged, along with their corresponding occurrence specifications on the lifelines. The following nodes and edges are typically drawn in a **UML sequence diagram**:

- Lifeline
- Execution specification
- Message
- Combined fragment
- Interaction use
- State invariant
- Continuation
- Destruction occurrence

Authentication of the Member:

- The member accesses the homepage of the website and selects the "member authentication" link.
- The system returns the authentication form.
- The member fills out the authentication form.
- The system consults the database by comparing the data and returns the member's page if successful, otherwise an error message.

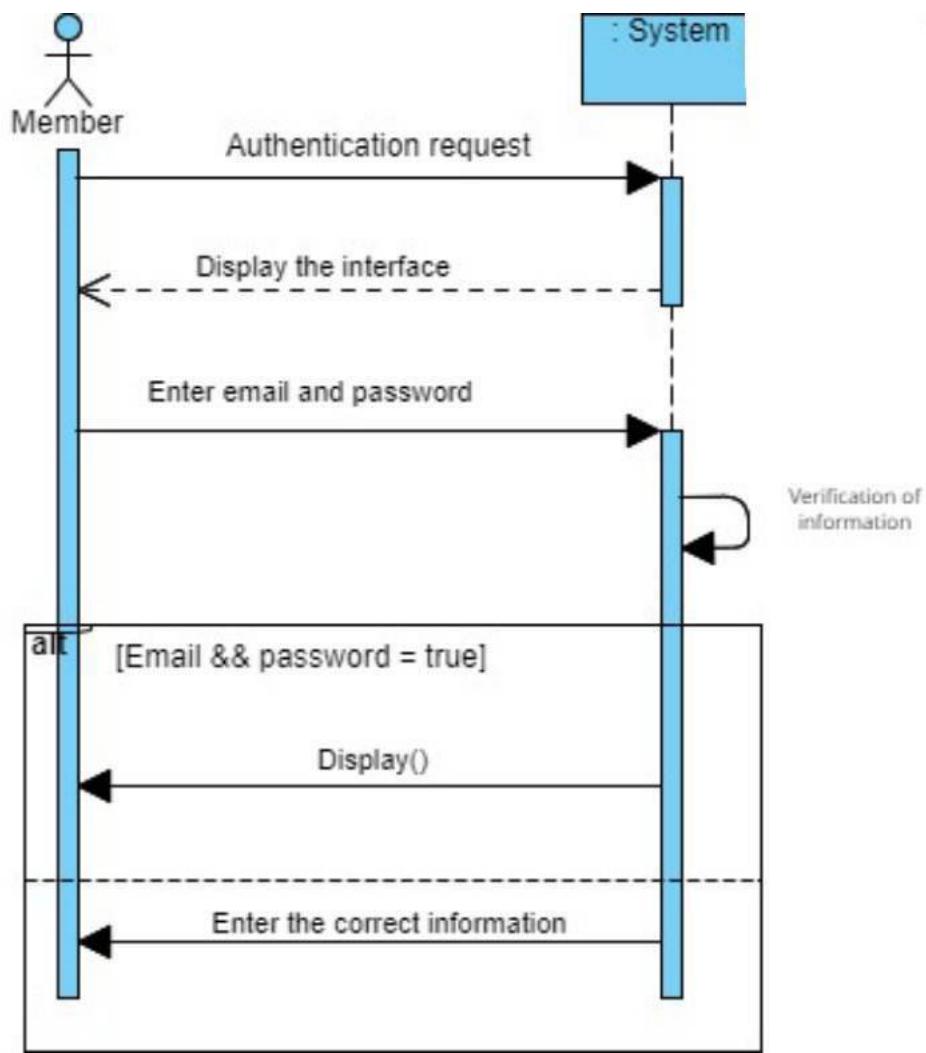


Figure 2.4: Sequence diagram for authentication.

Sequence diagram for adding a new member

- The administrator requests the add page.
- The system returns the member addition form.
- The administrator fills out the form and submits it.
- The system checks the entered fields, then adds the member to the member table if successful, otherwise displays an error message.

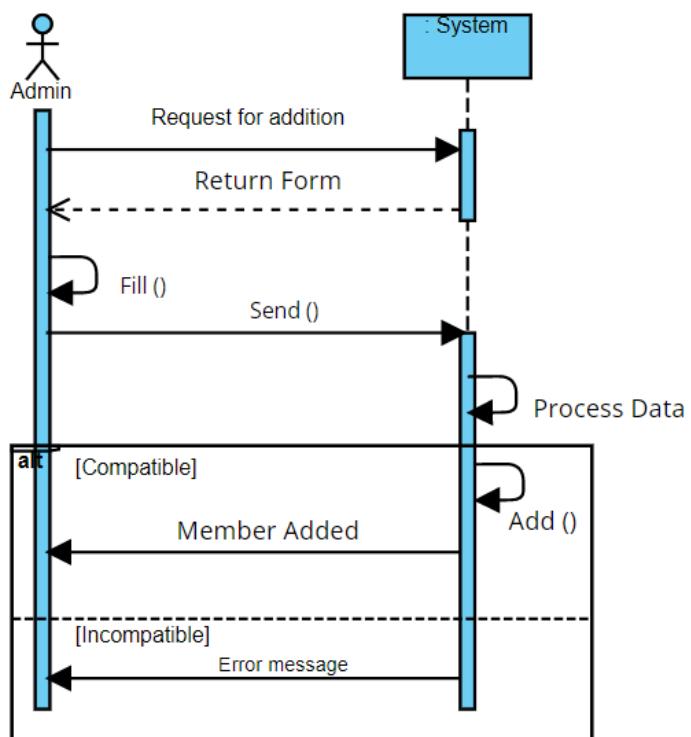


Figure 2.5: Sequence diagram for adding a member.

Sequence diagram for delete member

- The administrator requests deletion.
- The system returns a confirmation message.
- The administrator sends a response.
- The system deletes the selected member if successful, otherwise cancels the deletion.

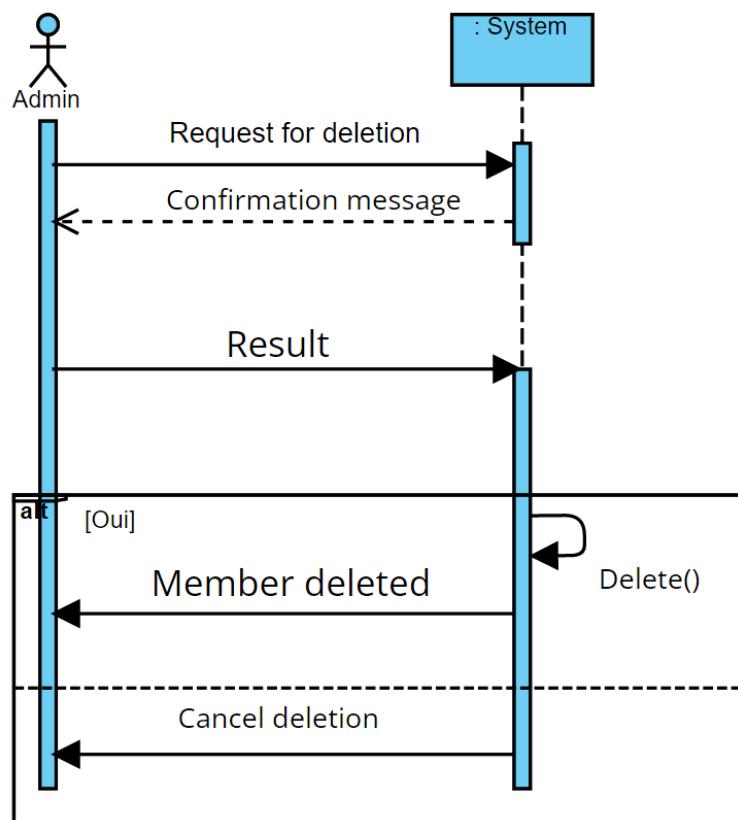


Figure 2.6: Sequence diagram for delete member

Sequence diagram for modifying a member:

- The administrator requests the page for modifying the selected member.
- The system returns the form for modifying the selected member.
- The administrator makes the necessary changes and submits.
- The system checks the entered fields, then modifies the member if successful, otherwise displays an error message.

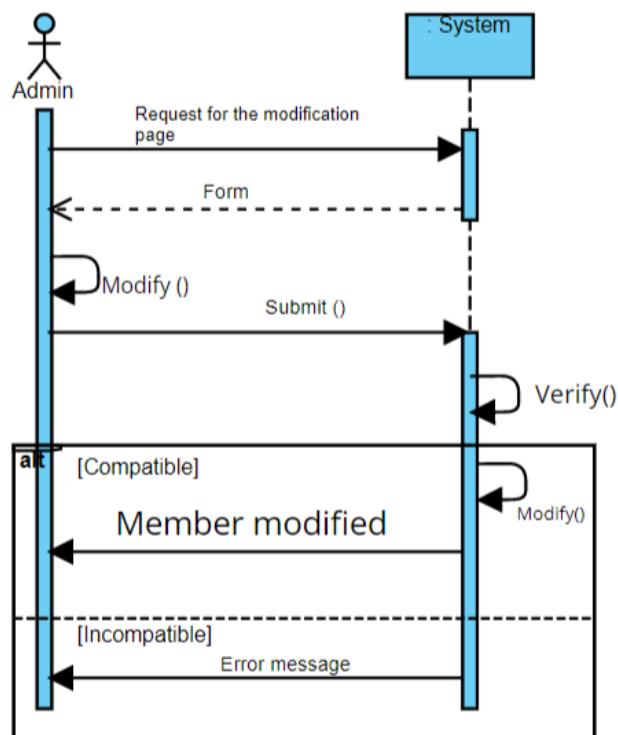


Figure 2.7: Sequence diagram for update member

2.6 Class Diagram

2.6.1 Definition

Class diagram is UML structure diagram which shows structure of the designed system at the level of **classes** and **interfaces** shows their **features**, **constraints** and relationships - **associations**, **generalizations**, **dependencies**, etc.

2.6.2 Class Relationships

A **class** may be involved in one or more relationships with other classes. A **relationship** can be one of the following types:

Relationship Type

1. Inheritance (or Generalization)
2. Association
3. Aggregation
4. Composition
5. Dependency

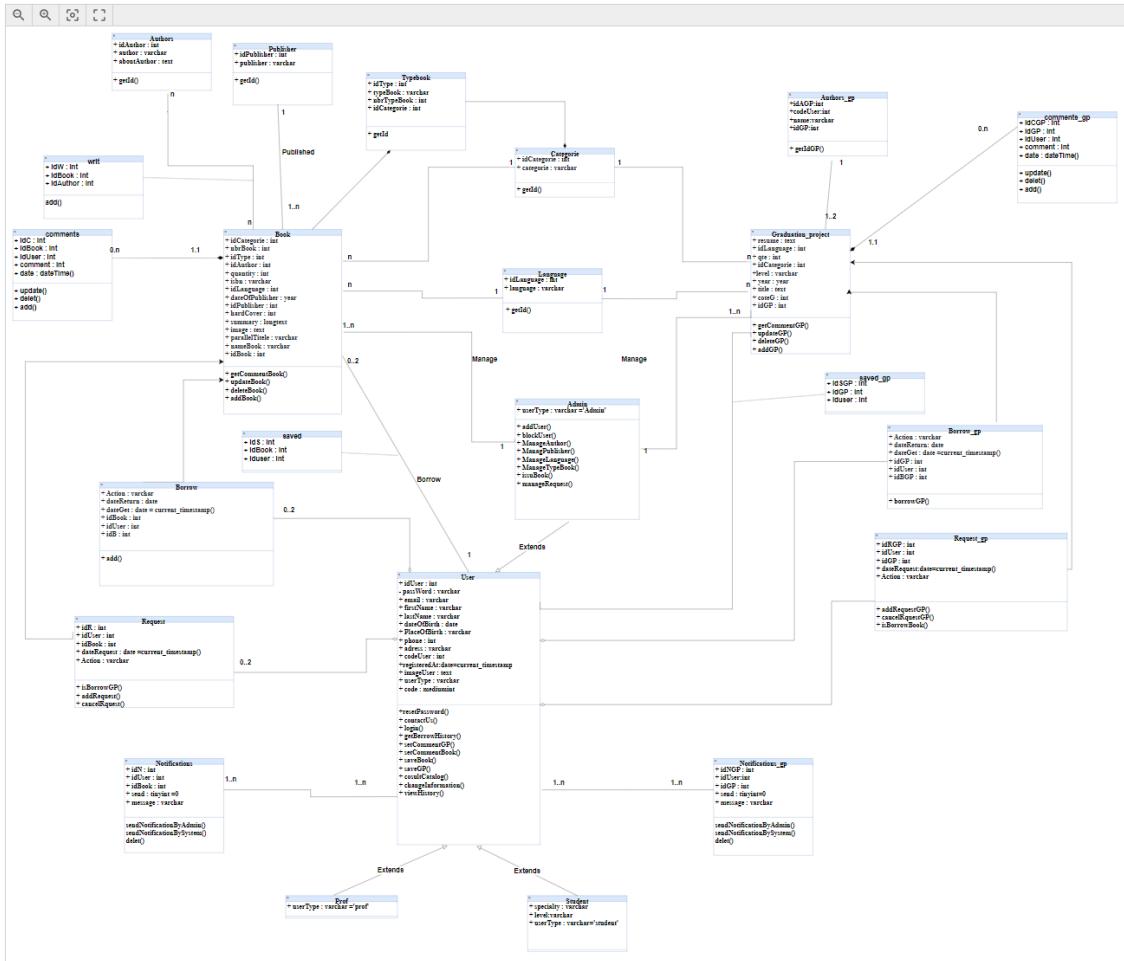


Figure 2.8: class diagram

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Figure 2.9: Qr Code of class diagram

2.7 Conclusion

In this chapter, we focused on the analytical and conceptual aspects of our application, as well as the databases that interact with it. For the analysis phase, we defined the different use cases and translated them through the construction of sequence and class diagrams in the design phase.

In the next chapter we handle **the implementation** of our Library.

Chapter **3**

Implementation

3.1 Introduction

This chapter summarize the following parts:

- Development tools and final Application.
- Testing the application and validation using real data.
- about security of the app.
- What we would add in the futur.

The goal of this chapter is to provide enough details for any reader to understand how the system was set up. Ultimately, this chapter is essential to demonstrate the feasibility and validity of the results presented in this research, as well as to provide useful practical information for those who wish to use or improve the system that we have developed.

3.2 Development Tools and Languages :

3.2.1 PHP

PHP (recursive acronym for php: Hypertext Preprocessor) is a widely-used open source general purpose scripting language that is especially suited for web development and can be embedded into HTML.[4]

Here are some crucial details regarding it:

- Because it is an interpretive language, a compiler is not necessary.
- We require a Web server on which PHP must be installed in order to run and execute PHP code.
- It is carried out on the server, and the browser receives the plain HTML output as a result.
- It is both free and open source.

3.2.2 MySQL

MySQL is a relational database management system (RDBMS) created by Oracle. Based on Structured Query Language (SQL). Data warehousing, e-commerce, and logging applications are just a few of the many uses for the application. [11]

MySQL, however, is most frequently utilized as an online database. From a single piece of information to a whole inventory of goods for an online business, it may be used to store anything.

3.2.3 XAMPP

XAMPP is a short form for Cross-Platform, Apache, MySQL, PHP, and Perl, and it allows you to build WordPress site offline, on a local web server on your computer. This simple and lightweight solution works on Windows, Linux, and Mac – hence the “cross-platform” part.[5]

3.2.4 Apache Web Server

Apache Web Server is made to enable the creation of web servers that can support one or more HTTP-based websites. The ability to support several programming languages, server-side scripting, an authentication system, and database support are notable characteristics.[10]

3.2.5 JavaScript

JavaScript is a scripting language that is mostly used in interactive web pages, making it an essential component of web applications. Along with HTML and CSS, JavaScript is the primary language used by web developers.

3.2.6 Visual Studio Code Editor

On your desktop, Visual Studio Code is a quick yet effective source code editor that runs on Windows, macOS, and Linux. It contains support for JavaScript, TypeScript, and

Node.js built in, as well as a robust ecosystem of extensions for additional languages and runtimes (including C++, C#, Java, Python, PHP, Go, and .NET).[8]

3.2.7 HTML

HTML stands for Hyper Text Markup Language. HTML is a markup language to give structure to the content in web documents. Like your software's are generally .exe files, text is .txt, likewise, nearly all of the content we see on the internet is stored as html files. HTML is the basic coding format of the web. It is a simple but powerful language to show all kinds of content on the web.[2]

3.2.8 CSS

ascading Style Sheets (**CSS**) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is designed to enable the separation of presentation and content, including layouts, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, and enable multiple web pages to share formatting by specifying the relevant CSS in a separate .[9]

3.3 Design of the database

3.3.1 Presentation of the tables :

The website's database needs to initially contain 20 tables.

- **Authors Table**

Column	Type	Attribut	Null	Default	Extra
idAuthor	int(11)		No		Auto_increment
author	varchar(250)		No		
aboutAth	text		No		

Table 3.1: Authors Table

- **AuthorsGp Table**

Column	Type	Attribut	Null	Default	Extra
idAGP	int(11)		No		Auto_increment
codeUser	int(11)		No		
name	varchar(250)		No		
idGP	int(11)		No		

Table 3.2: AuthorsGp Table

- **Books table**

Column	Type	Attribut	Null	Default	Extra
idBook	int(11)		No		Auto_increment
nameBook	text		No		
parallelTitle	text		No		
image	text		No		
summary	longtext		No		
hardCover	int(11)		No		
idPublisher	int(11)		No		
dateOfPublisher	year(4)		No		
idLanguage	int(11)		No		
isbn	varchar(25)		No		
quantity	int(11)		No		
idType	int(11)		No		
nbrBook	int(11)		No		
idCategorie	int(11)		No		
nbrCopy	int(11)		No	quantity	

Table 3.3: Books Table

- **Borrow table**

Column	Type	Attribut	Null	Default	Extra
idB	int(11)		No		Auto_increment
idUser	int(11)		No		
idBook	int(11)		No		
dateGet	date		No	current_timestamp()	
dateReturn	date		No		
Action	varchar(50)		No		
isReturn	tinyint(1)		No	0	

Table 3.4: Borrow Table

- **BorrowGp Table**

Column	Type	Attribut	Null	Default	Extra
idBGP	int(11)		No		Auto_increment
idUser	int(11)		No		
idGP	int(11)		No		
dateGet	date		No	current_timestamp()	
dateReturn	date		No		
Action	varchar(50)		No		
isReturn	tinyint(1)		No	0	

Table 3.5: BorrowGp Table

- **Category Table**

Column	Type	Attribut	Null	Default	Extra
idCategory	int(11)		No		Auto_increment
category	varchar(30)		No		

Table 3.6: Category Table

- **GraduationProjet Table**

Column	Type	Attribut	Null	Default	Extra
idGP	int(11)		No		Auto_increment
coteG	int(11)	No			
title	text	No			
year	year(4)	No			
level	varchar(50)	No			
idCategory	int(11)	No			
qte	int(11)	No			
idLanguage	int(11)	No	0		
resume	text	No			
nbrCopy	int(11)	No			

Table 3.7: GraduationProjet Table

- **Language Table**

Column	Type	Attribut	Null	Default	Extra
idLanguage	int(11)		No		Auto_increment
language	varchar(250)	No			

Table 3.8: Language Table

- **Notifications Table**

Column	Type	Attribut	Null	Default	Extra
idN	int(11)		No		Auto_increment
idUser	int(11)	No			
idBook	int(11)	No			
send	tinyint(1)	No	0		
message	varchar(250)	No			

Table 3.9: Notifications Table

- **NotificationsGp Table**

Column	Type	Attribut	Null	Default	Extra
idNGP	int(11)		No		Auto_increment
idUser	int(11)	No			
idGP	int(11)	No			
send	tinyint(1)	No	0		
message	varchar(250)	No			

Table 3.10: NotificationsGp Table

- **Publisher Table**

Column	Type	Attribut	Null	Default	Extra
idPublisher	int(11)		No		Auto_increment
publisher	varchar(250)	No			

Table 3.11: Publisher Table

- **Request Table**

Column	Type	Attribut	Null	Default	Extra
idR	int(11)		No		Auto_increment
idUser	int(11)		No		
dateRequest	date		No	current_timestamp()	
action	varchar(50)		No		

Table 3.12: Request Table

- **RequestGp Table**

Column	Type	Attribut	Null	Default	Extra
idR	int(11)		No		Auto_increment
idUser	int(11)		No		
idGP	int(11)		No		
dateRequest	date		No	current_timestamp()	
action	varchar(50)		No		

Table 3.13: RequestGp Table

- **TypeBooks Table**

Column	Type	Attribut	Null	Default	Extra
idType	int(11)		No		Auto_increment
typeBook	varchar(250)		No		
nbrTypeBook	int(11)		No		
idCategory	int(11)		No		

Table 3.14: TypeBooks Table

- **Users Table**

Column	Type	Attribut	Null	Default	Extra
idUser	int(11)		No		Auto_increment
passWord	varchar(250)		No		
email	varchar(250)		No		
firstName	varchar(250)		No		
lastName	varchar(250)		No		
dateOfBirth	date		No		
placeOfBirth	varchar(250)		No		
phone	int(11)		No		
adress	varchar(250)		No		
codeUser	int(11)		No		
specialty	varchar(250)		No		
level	varchar(250)		No		
registeredAt	date		No	current_timestamp()	
imageUser	text		No		
userType	varchar(25)		No		
block	tinyint(1)		No	0	

Table 3.15: Users Table

- **Comment Table**

Column	Type	Attribut	Null	Default	Extra
idC	int(11)		No		Auto_increment
idBook	int(11)		No		
idUser	int(11)		No		
comment	text		No		
date	idatetime		No	current_timestamp()	

Table 3.16: Comment Table

- **CommentGp Table**

Column	Type	Attribut	Null	Default	Extra
idCGP	int(11)		No		Auto_increment
idGP	int(11)		No		
idUser	int(11)		No		
Comment	int(11)		No		
date	idatetime		No	current_timestamp()	

Table 3.17: CommentGp Table

- **Saved Table**

Column	Type	Attribut	Null	Default	Extra
idS	int(11)		No		Auto_increment
idUser	int(11)		No		
idBook	int(11)		No		

Table 3.18: Saved Table

- **SavedGp Table**

Column	Type	Attribut	Null	Default	Extra
idSGP	int(11)		No		Auto_increment
idUser	int(11)		No		
idGP	int(11)		No		

Table 3.19: SavedGp Table

- **write Table**

Column	Type	Attribut	Null	Default	Extra
idW	int(11)		No		Auto_increment
idBook	int(11)		No		
idAuthor	int(11)		No		

Table 3.20: write Table

3.3.2 Application description

Home Page

The home page of our University Library Management System welcomes users to a modern and user-friendly interface.

Containing :

- two interfaces , one for the visitor and the second for the member if he login.
- Sign In page
- Contact Page
- **Home Page For Visitor :** In the visitor interface, visitors will find a login button and information about our services. And in the library catalog section, if a visitor clicks on "Show Books," they will be directed to the login page. This means that visitors cannot access the catalog unless they login.

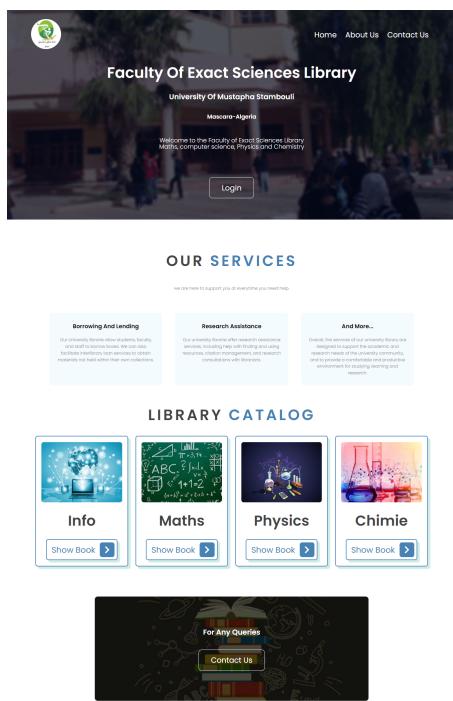


Figure 3.1: Home Page For Visitor

- **Home Page For Member :** The member interface is similar to the visitor interface with a few small differences. Members will find a logout button, allowing them to securely log out of their account when needed. Additionally, members will have a button to view their account, where they can access personalized information, such as their borrowing history, reserved books, and account settings.

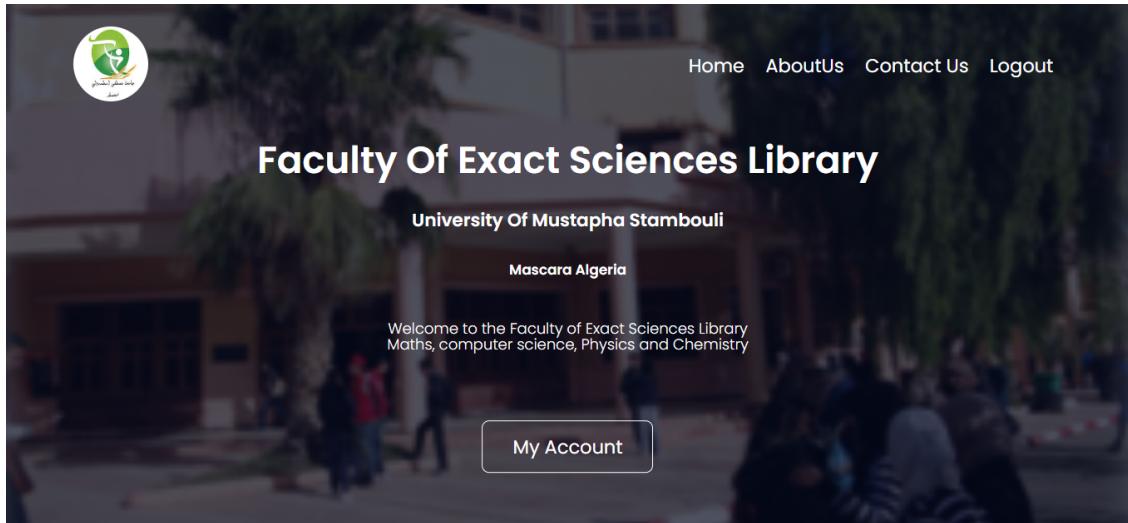


Figure 3.2: Home Page For Member

- **Sign In page** Student, professor and admin must authenticate to perform any of its operations:
 - Providing the correct credentials is required.
 - The system verifies the user's credentials and permissions, and based on that, it displays the appropriate page and opens a session for them. For instance, if the user is an admin, they will be directed to the admin page, while students will be directed to the student page.
 - If credentials were wrong, system will redirect back to the login screen with error message.
 - They can login using email or username and password.
 - In case a member forgets their password, we provide a convenient "Forgot Password" link on the login page. By clicking on this link, members can initiate the password recovery process.
- All web pages are mobile friendly and this is an example of it:

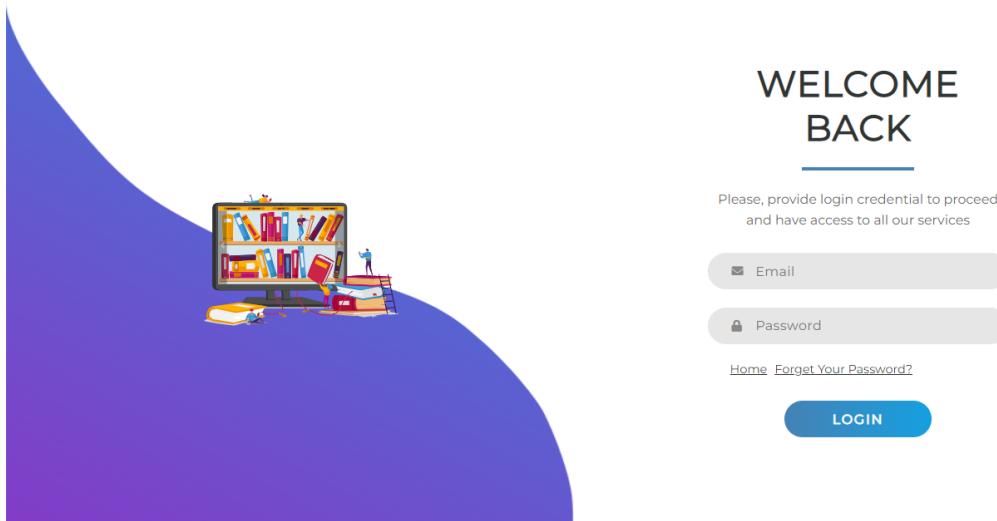


Figure 3.3: Sign In page

WELCOME BACK

Please, provide login credential to proceed and have access to all our services

Email

Password

[Home](#) [Forgot Your Password?](#)

[LOGIN](#)

Figure 3.4: Home Page Responsive

- **Contact Page :**

The contact page provides essential contact information such as email addressee, phone number, and physical address. And it include a contact form, allowing users to submit their messages directly through the website to Libraryunivmas-cara@gmail.com

This is useful if any user have:

- Inquiries or a desire to provide feedback
- Reporting any problems they may face

They can send us an email about it.

The contact page displays the university's address, phone number, and email address. To the right is a form for sending an email, including fields for name, email address, subject, and message, along with a 'Send Message' button.

University of Mustapha Stambouli, Mascara
Library, C47H+JCW, Av. Cheikh El Khaldi, Mascara 29000

065594864
Sunday to thursday,08:30AM to 4PM

libraryunivmascara@gmail.com
Email us your query

Enter Your name
Enter Your Email address
Enter Your subject
Message

Send Message

Figure 3.5: Contact Page

Member Interface :

The member interface is accessible exclusively to logged-in users, including professors and students. It provides a personalized and secure space where members can access specific features and functionalities tailored to their needs. Containing :

- Account setting.
- Consult the catalogues.
- **Account setting :**

The member can access his account and perform some operations

- Modification of personal information
- View history
- View notification
- View saved resource
- View reserved resource

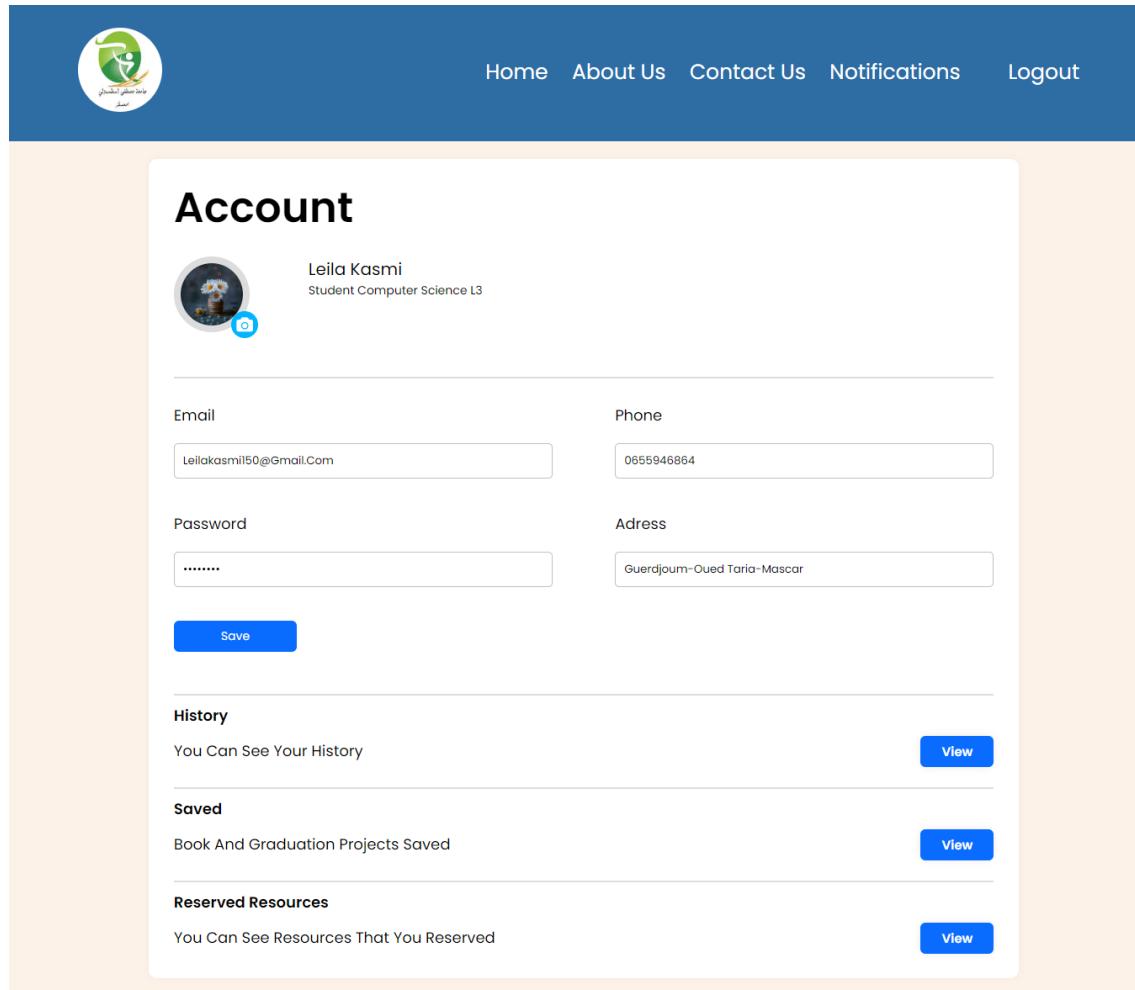


Figure 3.6: Member account

- **History :**

The members have access to their borrowing history. This feature allows them to view a record of the items they have borrowed from the library in the past.

The screenshot shows a web application interface with a blue header bar. The header contains a logo on the left and navigation links: Home, About Us, Contact Us, Notifications, Settings, and Logout. Below the header is a search bar with a placeholder "Search..." and a magnifying glass icon. The main content area is titled "History". It displays two entries, each with a thumbnail image, the title, a brief description, the date it was added, and a "View" button.

Thumbnail	Title	Description	Date Added	Action
	MATHCAD 7 MANUEL DE L'UTILISATEUR	Reed In : 2023-03-13	View	
	Library Management System Bachelors 2023	Reed In : 2023-05-05	View	

Figure 3.7: History Page

• **Notification :**

the members can view notifications related to various aspects of their account. This includes notifications about overdue resources that need to be returned, as well as notices regarding requested resources that were previously unavailable but are now available for borrowing.

The screenshot shows a notification page with a blue header bar containing the university logo and navigation links: Home, AboutUs, ContactUs, Notifications, Settings, and Logout. The main content area has a light beige background and features a large title "Notification". Below it, there are two notifications listed:

- Notification 1:** Approximation Numérique Avec MATLAB : The Book Is Currently Available
Delete Get It
- Notification 2:** Approximation Numérique Avec MATLAB : Return The Book, The Specified Period Has Been Exceeded
Delete Get It

Figure 3.8: Notification Page

- **Saved resource:**

The members have the ability to view a list or section where they can access the resources they have saved or bookmarked for future reference or interest.

The screenshot shows a "Saved" page with a blue header bar containing the university logo and navigation links: Home, AboutUs, ContactUs, Notifications, Settings, and Logout. The main content area has a light beige background and features a large title "Saved". Below it, there are two saved items listed:

- Saved 1:** Algebre - Analyse Probabilites
Delete View
- Saved 2:** Library Management System
Delete View

Figure 3.9: Saved resource

- **Reserved resource:**

The member can see the resource that he reserved and can delete the request.

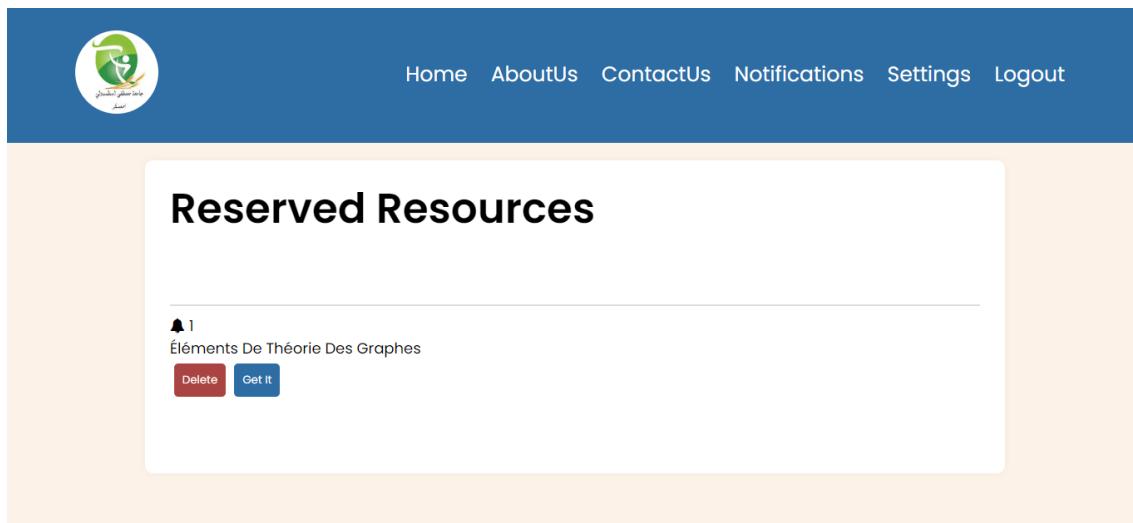


Figure 3.10: Reserved resource

- **Consult the catalogues :**

Members can access details of resources like titles, authors, descriptions, and availability status, helping them in their search for specific resources within the library. They can access to graduation projects or books

- Consult type of resource.
- Consult resources.

- **Consult type of resource :**

In the first, users should consult the type of resource to find what they need, allowing them to narrow down their search and locate resources that align with their preferences or research needs

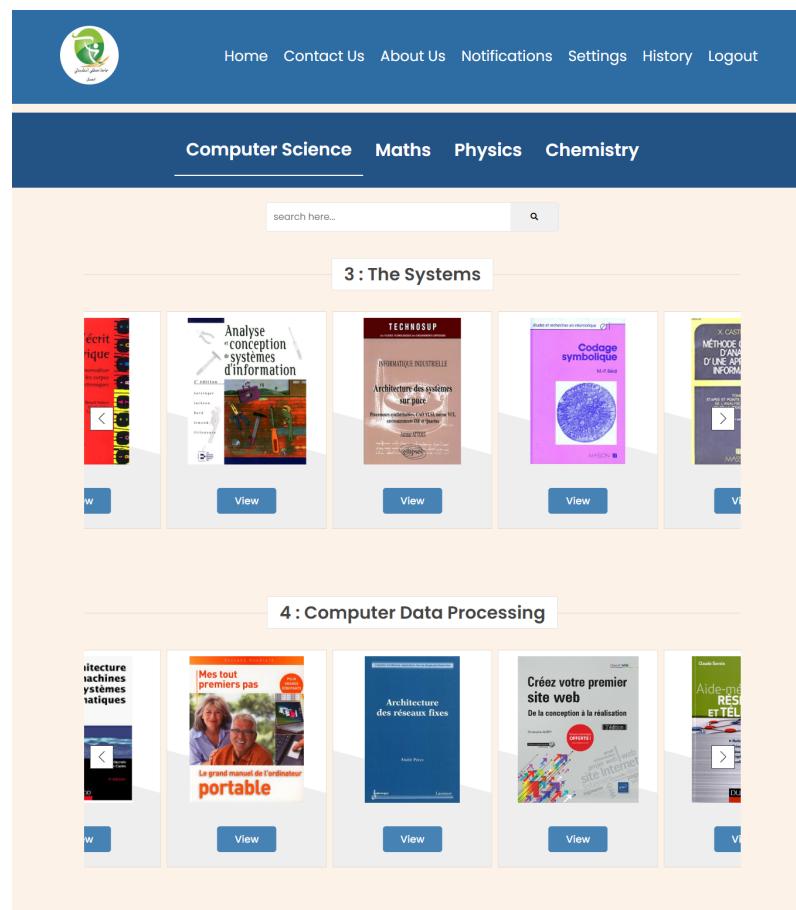


Figure 3.11: Type Of Resource

- **Consult resources :**

The member can consult resources and access various options, including information about the resource' and summary, author biography, other works by the author, and a comment section that allows the member to express their opinions about the resource.

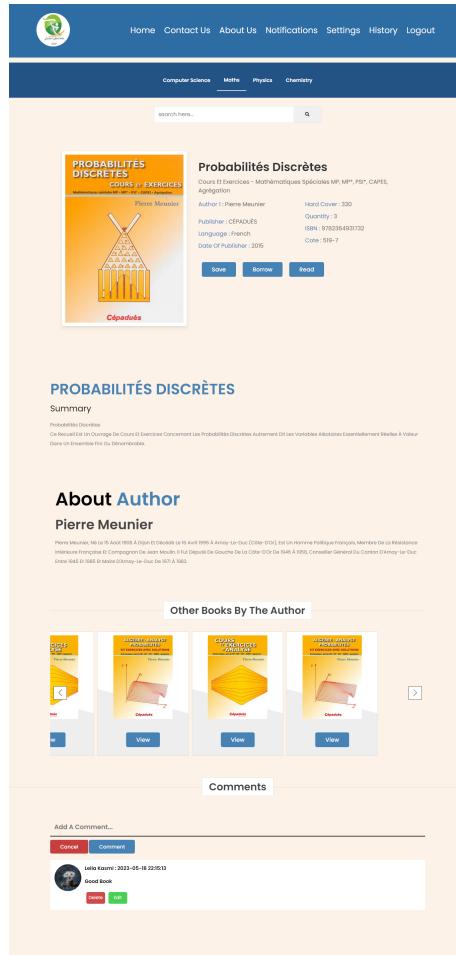


Figure 3.12: Consult resource

Admin Interface :

The admin interface is a dedicated section within the university library management system designed specifically for administrator or library staff members. It provides them with the necessary tools and functionalities to manage various aspects of the library system efficiently.

Here are some common features and capabilities found in the admin interface:

- Borrowing and Return Management.

- Users Management

- Resource Management

- Settings

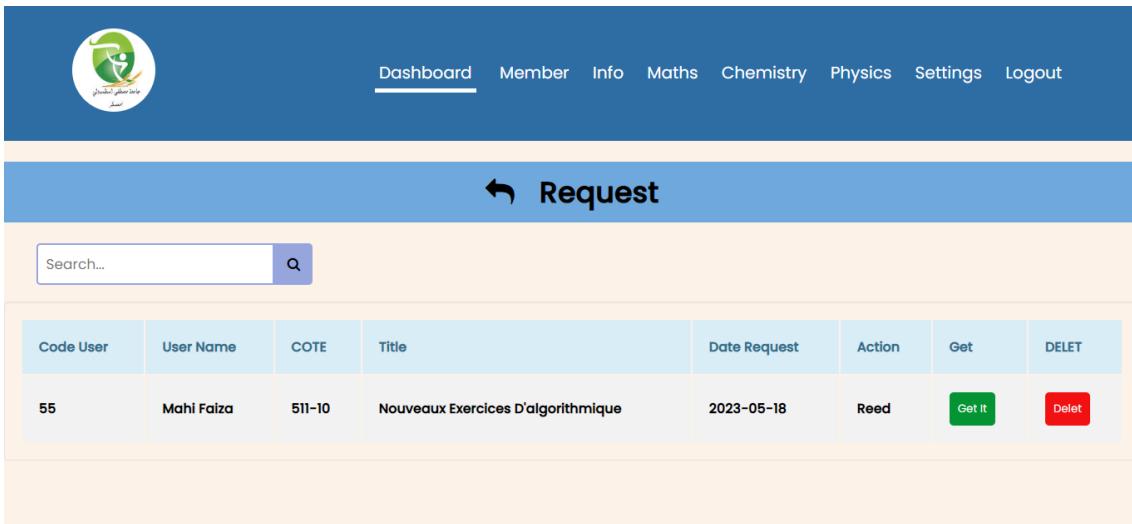
- **Borrowing and Return Management :**

Admin can oversee and manage the borrowing and return processes.

Code User	User	COTE	Title	Action
2	Khadidja Bouaka	510-6	Mathématiques Et Informatique 1	<button>Return</button>
1	Leila Kasmi	510-4	Approximation Numérique Avec MATLAB	<button>Return</button>

Figure 3.13: Borrowing and Return Management

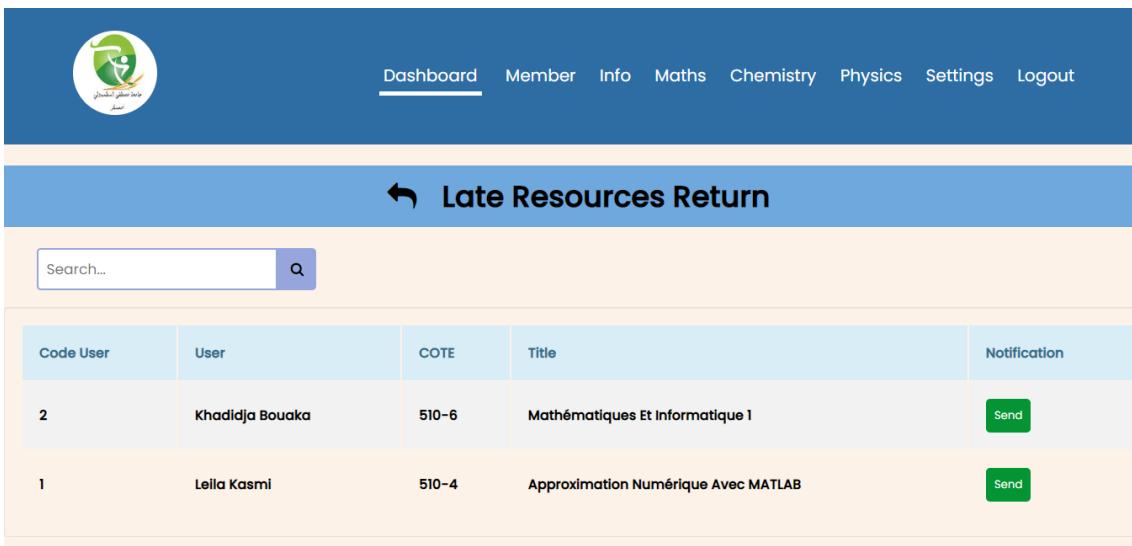
- Manage Requests :



The screenshot shows a web application interface for managing requests. At the top, there is a navigation bar with a logo on the left and links for Dashboard, Member, Info, Maths, Chemistry, Physics, Settings, and Logout. Below the navigation bar, a blue header bar displays a back arrow icon and the text "Request". A search bar with placeholder text "Search..." and a magnifying glass icon is located above a table. The table has a light blue header row with columns for "Code User", "User Name", "COTE", "Title", "Date Request", "Action", "Get", and "DELETE". A single data row is shown, representing a request from user "Mahi Faiza" with code "55", COTE "511-10", title "Nouveaux Exercices D'algorithme", and date "2023-05-18". The "Action" column contains a green button labeled "Reed" and a red button labeled "Delete".

Figure 3.14: Request Page

- Late Resources Return :



The screenshot shows a web application interface for managing late resource returns. The layout is similar to Figure 3.14, with a navigation bar at the top and a blue header bar with a back arrow icon and the text "Late Resources Return". A search bar is present above a table. The table has a light blue header row with columns for "Code User", "User", "COTE", "Title", and "Notification". Two data rows are listed: one for user "Khadidja Bouaka" with code "2", COTE "510-6", title "Mathématiques Et Informatique 1", and a green "Send" button; and another for user "Leila Kasmi" with code "1", COTE "510-4", title "Approximation Numérique Avec MATLAB", and a green "Send" button.

Figure 3.15: Late Resources Return

- **Users Management :**

Admins can manage user accounts, including creating new accounts, modifying user information , deleting or blocking them.

S.L	Name	Email	Specialty	Address	View	Edit	Delete
1	Leila Kasmi	Leilakasmil50@Gmail.Com	Computer Science L3	Guerdjoum-Oued Taria-Mascar			
2	Khadijda Bouaka	Khadijabouaka7@Gmail.Com	Computer Science L3	Oued Taria-Mascar			
3	Diya Karima	Diaykarimainf@Gmail.Com	Computer Science M2	Nadour Brahim Oued Taria			

Figure 3.16: Users Management

- The admin can also see biography of the member and his history.

The screenshot displays a member profile for 'KHADIDJA BOUAKA'. The profile includes a placeholder user icon, the member's name, and various statistics: location (Oued Taria-Mascar), phone calls (0), email (Khadijabouaka7@gmail.com), messages (2), and education level (Computer Science L3). To the right, the 'Faculty Of Exact Sciences Library' and 'University Mustafa Stambouli' are mentioned. Below this, detailed personal information is listed: First Name (Khadidja), Last Name (Bouaka), Date Of Birth (2002-08-08), and Place Of Birth (Ghriss). At the bottom, a 'HISTORY' section shows four entries of borrowed books, each with a 'View' button:

COTE	Name Book	Date Borrow	Date Return	View
510-1	Mathématiques PSI	2023-03-14	2023-03-14	
511-4	MATHCAD 7	2023-05-05	2023-05-05	
510-1	Mathématiques PSI	2023-05-05	2023-05-05	
510-6	Mathématiques Et Informatique 1	2023-05-05	2023-05-12	

Figure 3.17: Biography of the member

- **Resource Management :**

Admins have the ability to manage resources in the library system. However, before they can perform any management tasks, they need to choose the type of resources they want to work with. This allows them to narrow down their focus and access specific categories of resources for efficient management.

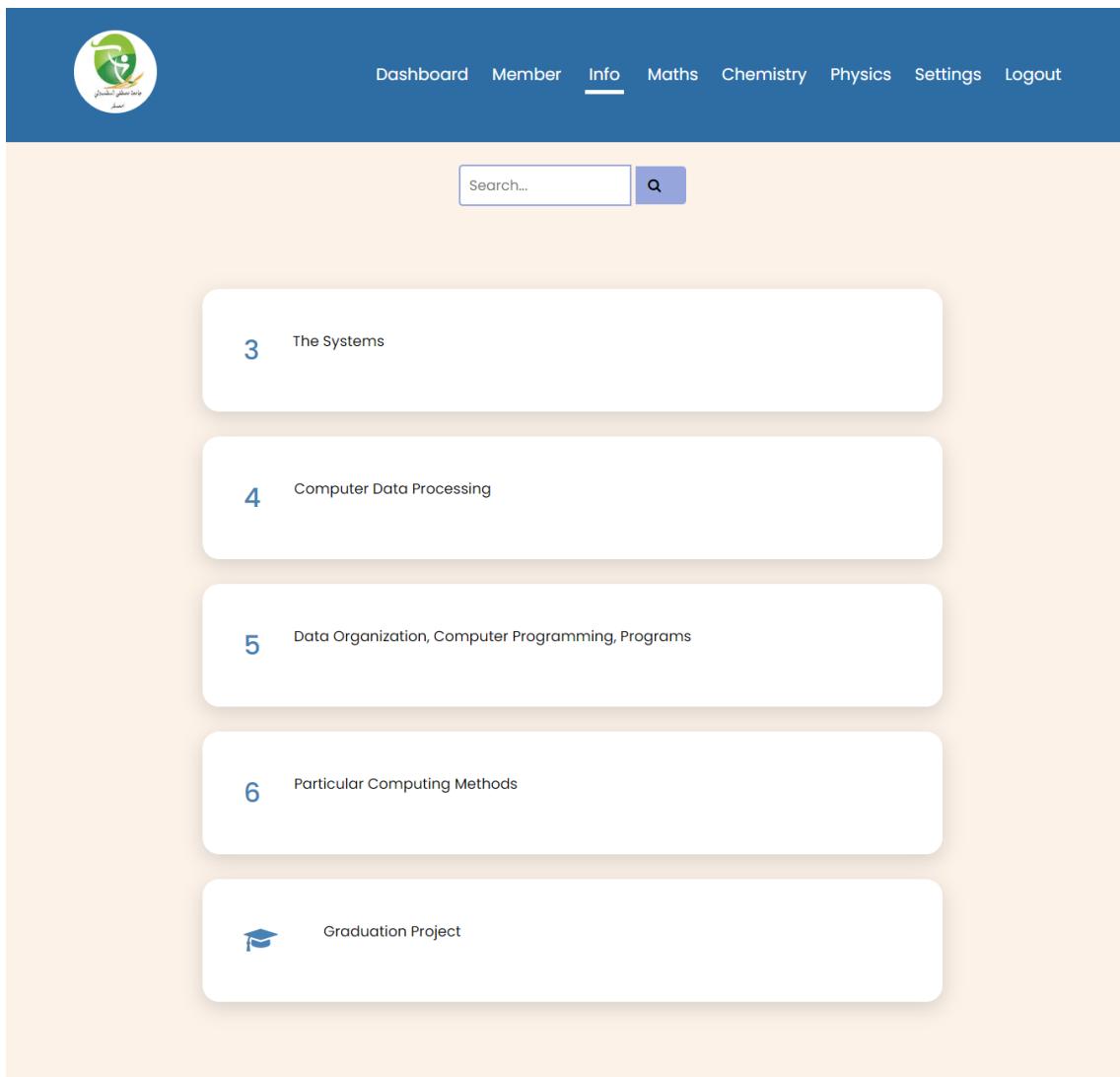


Figure 3.18: Type of resource

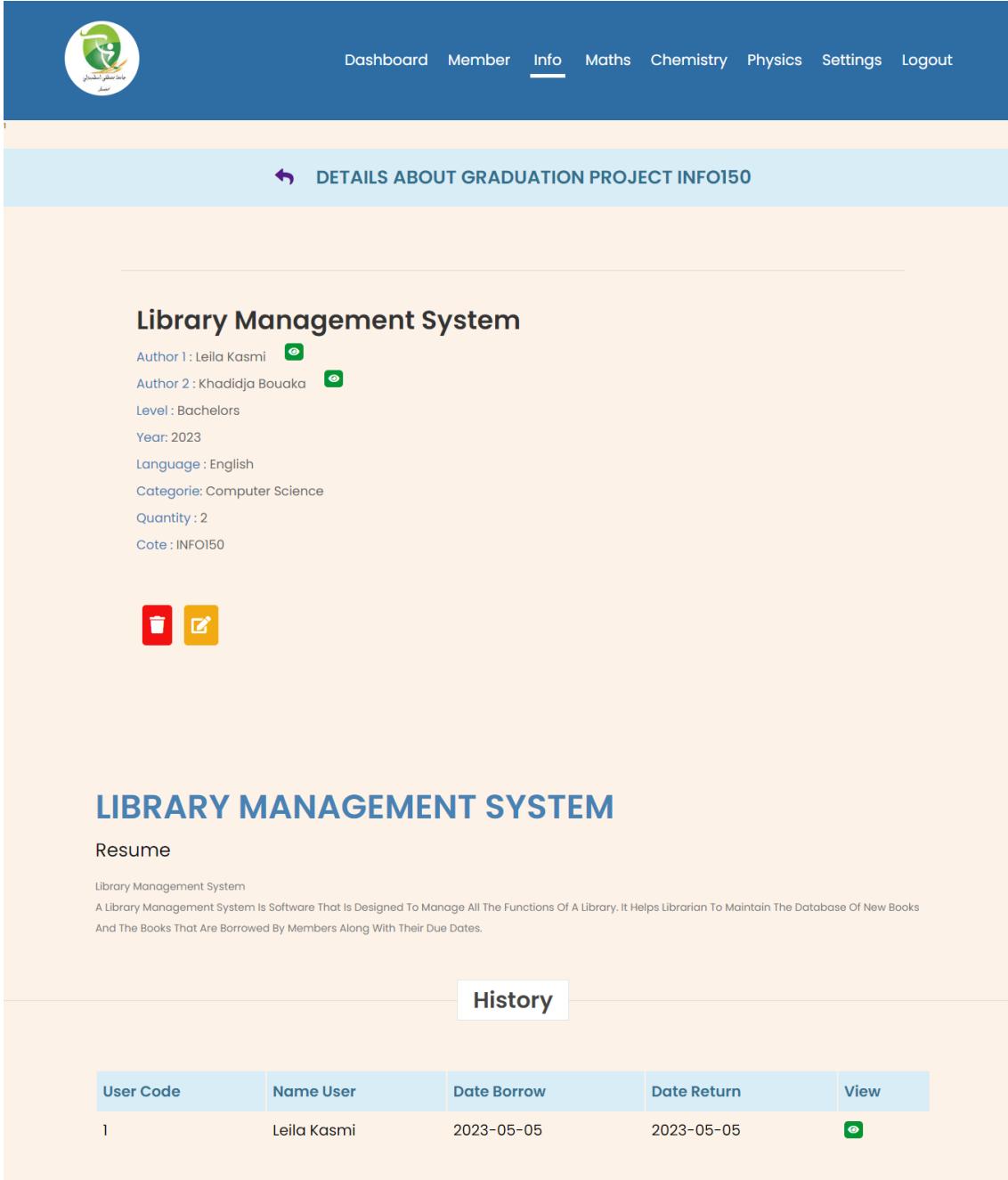
- Then he can add, edit, and remove resources from the library catalog

The screenshot shows a web-based library management system. At the top, there is a navigation bar with links: Dashboard, Member, Info (which is underlined), Maths, Chemistry, Physics, Settings, and Logout. On the far left, there is a logo. Below the navigation bar, the title "THE SYSTEMS" is displayed. Underneath the title, there is a search bar with a placeholder "Search..." and a magnifying glass icon. To the left of the search bar is a blue button labeled "+ Add New". A table follows, with columns: Cote, Book, Author, Date Of Publisher, ISBN, IMAGE, View, Edit, and Delete. Two book entries are listed:

Cote	Book	Author	Date Of Publisher	ISBN	IMAGE	View	Edit	Delete
1	De L'écrit Au Numérique	Benoit Habert Cecile Fabre Fabrice Issac	1998	9782225829536				
2	Analyse Et Conception De Systèmes D'information	Satzinger John W Stephen D. Burd	2003	9782893772509				

Figure 3.19: Manage Resource

- And he can also see information card of the resources and history .



The screenshot shows a web-based library management system. At the top, there is a navigation bar with a logo on the left and links for Dashboard, Member, Info (which is underlined), Maths, Chemistry, Physics, Settings, and Logout. Below the navigation bar, a header bar displays a back arrow and the text "DETAILS ABOUT GRADUATION PROJECT INFO150". The main content area has a title "Library Management System". Underneath the title, there is a list of project details:

- Author 1 : Leila Kasmi 
- Author 2 : Khadidja Bouaka 
- Level : Bachelors
- Year: 2023
- Language : English
- Categorie: Computer Science
- Quantity : 2
- Cote : INFO150

Below the details are two icons: a red trash bin and a yellow edit/pencil icon.

Further down, there is a section titled "LIBRARY MANAGEMENT SYSTEM" with a "Resume" heading. The resume text describes the system as a software designed to manage library functions, helping librarians maintain book databases and track borrowed books with due dates.

A "History" tab is visible above a table. The table has columns for User Code, Name User, Date Borrow, Date Return, and View. One row is shown with the values: 1, Leila Kasmi, 2023-05-05, 2023-05-05, and a green edit icon.

Figure 3.20: Information card of resource

- **Settings :** In the settings section of the library management system, administrators have the ability to update their own information. Additionally, administrators can manage authors, publishers , languages and resource types. Lastly, administrators can manage the counting of resource numbers.

The screenshot shows the 'Settings' section of a web application. At the top, there is a navigation bar with links: Dashboard, Member, Info, Maths, Chemistry, Physics, Settings, and Logout. The 'Settings' link is underlined, indicating it is the active page.

Account

Admin Admin

Email: libraryunivmascara@gmail.com Phone: 065594864

Password: Adress: Library, C47H+JCW, Av. Cheikh El Khaldi, Mascara 29000

[Save](#)

Authors
Manage Authors [View](#)

Publisher
Manage Publisher [View](#)

Language
Manage Language [View](#)

Resource Types
Manage Resource Types [View](#)

LIBRARY IN FIGURES

Info Book : 20 GP : 2

Maths Book : 74 GP : 0

Chemistry Book : 1 GP : 0

Physics Book : 10 GP : 0

Figure 3.21: Settings

3.4 Conclusion :

In this chapter, we presented the various tools used for the realization of our web application, as well as a brief description of our database, and at the end some scenarios of use of our application were presented.

General Conclusion

A library management system can help university libraries to manage their vast collections of books, journals, and other resources more efficiently. It can also assist in managing the circulation of materials, tracking overdue items, and generating reports that can aid in decision-making processes. This website provides a computerized version of library management system which will benefit the students as well as the staff of the library. It makes entire process online where student can search books, staff can generate reports and do book transactions.

Our main objective was to develop an application for our library that offers a set of services such as

- Online Catalog: Students and professors can search and browse the library's collection online.
- Place reservations on the books they want to borrow. This system can also allow online renewal and reservation.
- Our app provides real-time notifications and reminders of due dates and reservations
- .
- Providing remote services including research, borrowing, downloading, and account verification. This enables students to access research materials and services without the need to physically visit the library.

Despite the fact that our website development is not yet complete, this is what we will add in the future :

- An electronic library or online library where PDF books can be added, allowing students to read them directly.
- Create a blog that enables professors to publish scientific articles.

- Mobile App for Enhanced Accessibility: Developing a mobile application for the library management system, allowing users to search for books, reserve materials, receive notifications for due dates and available resources, and access digital content from their smartphones or tablets. This provides convenient and instant access to library services.
- creating a space for collaborative learning and research, and integrating emerging technologies such as AI and VR.
- Adding advanced features such as book recommendations based on user preferences.

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